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09/238,075	01/27/1999	JAMES M. CLAUSS	06089.P019	6752

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EXAMINER	
MCCARTNEY, LINZY T	
ART UNIT	PAPER NUMBER
2671	

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/238,075

Applicant(s)

CLAUSS, JAMES M. 

Examiner

Linzy McCartney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4, 10, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 4, 10, and 18 each recite "...and/or..." which renders the aforementioned claims indefinite. Any subsequent recitations of "...and/or..." are also rejected.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 9, 10, 13, 15, 17, 18 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,815,154 to Hirschtick et al. (Hirschtick) in view of Tong et al., "Artificial Intelligence in Engineering Design" (Tong).

- a. Referring to claim 1, Hirschtick discloses identifying a failure within a first failed feature in a computer aided design (CAD) assembly (column 9, lines 25-34 and Figure 18). Hirschtick does not explicitly disclose automatically providing a first set of treatments for the failure within the first failed feature from which to select, said first set

of treatments based at least in part on the feature within the first failed feature. Tong discloses automatically providing a first set of treatments for a failure said first treatments based at least in part on the failure (Figure 14-11, bottom right pane and Figure 14-11, caption). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Tong. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3).

b. Referring to claim 3, Hirschtick discloses wherein identifying is based at least in part on error and/or warning messages generated during execution of the CAD assembly (column 9, lines 25-34).

c. Referring to claim 6, Hirschtick discloses receiving a selection indicating the first failed feature (column 9, lines 25-34 and Figure 18).

d. Referring to claim 9, Hirschtick discloses one of providing a detailed textual description of the failure within the first failed feature; designating the first failed feature in a graphical representation of the CAD assembly; stepping through execution of the CAD assembly; and listing at least one feature upon which the first failed feature depends (column 9, lines 25-34 and Fig. 18).

e. Referring to claim 10, Hirschtick discloses one of providing an error and/or warning message corresponding to the failure within the first failed feature, said error and/or warning message being generated during execution of the CAD assembly; providing an extended message from a data structure of extended messages based on the failure within the first failed feature; and providing a calculated response based on

deviation of the failure within the first failed feature from acceptable values (column 9, lines 25-34 and Fig. 18).

f. Referring to claim 13, Hirschtick discloses wherein stepping through execution of the CAD assembly comprises at least one of executing only a next feature in the CAD assembly after receiving a next feature indication from a user; sequentially executing the CAD assembly at a reduced rate; pausing execution after each feature on which the first failed feature depends is executed; and designating only a most recently executed feature in the CAD assembly as the CAD assembly is executed (column 8, lines 51- 67).

g. Referring to claim 14, Hirschtick does not explicitly disclose receiving a selection indicating one of the first set of treatments; and automatically initiating the selected treatment. Tong discloses the aforementioned limitation (page 453, Section 14.4.3, paragraph 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Tong. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3).

h. Referring to claim 15, Hirschtick does not explicitly disclose the first set of treatments, a delete treatment, a suppress treatment, a reorder treatment, and a targeted edit treatment, and wherein automatically initiating the selected treatment comprises one of opening a user interface used to create the CAD assembly; deleting the first failed feature from the CAD assembly; suppressing the first failed feature in the CAD assembly; moving the first failed feature to a different place in an execution sequence of the CAD assembly; and opening a reduced function user interface to edit a parameter of

the first failed feature predicted to be responsible for the failure within the first failed feature. Tong discloses the aforementioned limitation (Fig. 14-11, caption). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Tong. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3).

- i. Referring to claim 17, Hirschtick wherein moving the first failed feature comprises one of receiving a user indication of where the first failed feature should be moved; and receiving a selection indicating a suggested location for the first failed feature (column 14, line 61 – column 15, line 19).
- j. Referring to claim 18, Hirschtick discloses opening a parameter editing field and suggesting a value and/or value range for the parameter (Fig. 12).
- k. Claim 20 is rejected with the rationale of the rejection of claim 1. Claim 20 is merely claim 1 recited as an apparatus.
- l. Claim 21 is rejected with the rationale of the rejection of claims 6 and 9. Claim 21 is merely claims 6 and 9 in apparatus form.
- m. Claim 22 is rejected with the rationale of the rejection of claim 14. Claim 22 is merely claim 14 recited as an apparatus.
- n. Claim 23 is rejected with the rationale of the rejection of claim 1. Claim 23 is merely claim 1 recited as a program.
- o. Claim 24 is rejected with the rationale of the rejection of claims 6 and 9. Claim 24 is merely claims 6 and 9 recited as a program.

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p. Claim 25 is rejected with the rationale of the rejection of claim 14. Claim 25 is merely claim 14 recited as a program.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krause et al, "Processing of CAD-Data – Conversion, Verification and Repair" (Krause) in view of Tong.

a. Krause discloses identifying failures within a plurality of additional failed features among a plurality of features comprising the CAD assembly (page 252, column 2, paragraphs 2-3 and Figure 6). Krause does not explicitly disclose automatically providing a plurality of respective sets of treatments for each failure within the plurality of additional failed features from which to select, each of said plurality of respective sets of treatments based at least in part on a corresponding failure. Tong discloses automatically providing a plurality of respective sets of treatments for each failure (page 453, Section 14.4.3 paragraphs 1 and 2). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Krause with the teachings of Tong. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3).

3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Tong as applied to claim 1 further in view of U.S. Patent No. 5,790,780 to Brichta et al. (Brichta).

a. Referring to claim 4, the method of Hirschtick as applied to claim 1 above meets the limitations recited in claim 4 except Hirschtick does not explicitly disclose generating a diagnosis object for each failed feature of the CAD assembly, each diagnosis object

comprising information to identify and/or illustrate at least one failure in a respective failed feature; storing each diagnosis object in persistent memory; retrieving a diagnosis object from the persistent memory corresponding to the first failed feature based on an indication of the first failed feature; and providing information to identify and/or illustrate the failure in the first failed feature based on diagnosis object corresponding to the first failed feature. Tong discloses generating a diagnosis object for each failure of the CAD assembly and providing information to identify and/or illustrate the failure based on the diagnosis object (Fig. 14-11). Tong does not explicitly disclose storing each diagnosis in persistent memory or retrieving a diagnosis object from the persistent memory. Brichta discloses storing a diagnosis object in persistent memory and retrieving a diagnosis object from persistent memory (Abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Tong and Brichta. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3) and generate analytical information about failures that can be used for a variety of purposes (Brichta, column 2, lines 29-31).

b. Referring to claim 5, the method of Hirschtick as applied to claim 4 above meets the limitations recited in claim 5 except Hirschtick does not explicitly disclose the information comprises at least one of a CAD assembly identifier, a failure text description, a feature identifier, an instance transform, a feature identifier, an instance transform, a feature geometry, a feature coordinate set, a failure result type, and a set of feature dependencies. Tong discloses the information comprises at least one of a CAD



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assembly identifier, a failure text description, a feature identifier, an instance transform, a feature identifier, an instance transform, a feature geometry, a feature coordinate set, a failure result type, and a set of feature dependencies (Figure 14-11). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Tong. The suggestion/motivation for doing so would have been to interactively suggest incremental improvements to the user (Tong, page 459, paragraph 3).

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being obvious over Hirschtick in view of Tong as applied to claim 6 above further in view of U.S. Patent 6,232,982 to Harding.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or

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subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

a. Referring to claim 7, the modified method of Hirschtick as applied to claim 6 above meets the limitations recited in claim 7 except wherein receiving the selection comprises one of receiving a pointer command from a browser that lists the first failed feature; receiving a toolbar command followed by a pointer indication in a list including the first failed feature; and receiving a menu command followed by a pointer indication in a list including the first failed feature. Harding discloses the aforementioned limitation (column 5, line 60 – column 6, line 27 and Figure 2B). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Harding. The suggestion/motivation for doing so would have been to provide additional debugging information to the user (Harding, column 6, lines 21-24).

b. Referring to claim 8, the modified method of Hirschtick as applied to claim 1 meets the limitations recited in claim 8 except providing an indication of at least one primary failed feature if the first failed feature is a secondary failed feature; and providing an option to select from the at least one primary failed feature if the first failed feature is a secondary feature. Harding discloses the aforementioned limitation (column 5, line 60 – column 6, line 27 and Figure 2B). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the method of Hirschtick with the teachings of Harding. The suggestion/motivation for doing so would

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have been to provide additional debugging information to the user (Harding, column 6, lines 21-24).

5. Claims 11, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirschtick in view of Tong as applied to claims 9 and 15 above further in view of Barequet et al, "Repairing Cad Models" Barequet.

a. Referring to claim 11, the modified method of Hirschtick as applied to claim 9 above meets the limitations recited in claim 1 except designating the first failed feature comprising at least one of implementing a command to toggle highlighting of a representation of the first failed feature; sonaring in on the representation; and zooming in of the representation. Barequet discloses the aforementioned limitation (page 367, column 2, paragraph 6). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user to see small areas of the geometry while maintaining context (Barequet, page 367, column 2, paragraph 6).

b. Referring to claim 12, Hirschtick does not explicitly disclose generating at least one of a set of at least one edge of the first failed feature, a set of at least one surface of the first failed feature, and a graphical error icon for use as the representation of the first failed feature, wherein the representation indicates where the first failed feature would have been generated in the CAD assembly. Barequet discloses the aforementioned limitation (page 467, column 2, paragraphs 1-3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the

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method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user recognize errors in the model (page 467, column 2, paragraphs 1-3).

c. Referring to claim 16, Hirschtick does not explicitly disclose wherein opening the user interface comprises at least one of zooming in on coordinates of the first failed feature in the CAD assembly; designating the first failed feature in the CAD assembly; and rolling back execution of the CAD assembly to just before execution of the first failed feature. Barequet discloses the aforementioned limitation (page 367, column 2, paragraphs 3-6). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to further modify the method of Hirschtick with the teachings of Barequet. The suggestion/motivation for doing so would have been to allow the user recognize errors in the model (page 467, column 2, paragraphs 1-3).

#### *Allowable Subject Matter*

6. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5:30PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

ltm  
February 27, 2003



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600